

EXHIBIT B

MacBook Pro

[Design](#) [Features](#) [Performance](#) [Software](#) [The Environment](#) [Tech Specs](#)

High performance reaches a whole new height.

With up to twice the processing speed, advanced graphics, and ultrafast Thunderbolt I/O, there's plenty of fast to go around.



New Intel Core i5 and i7 processors.

Up to 2x faster at the core.

New quad-core Intel Core i7 processors are standard on the 15- and 17-inch MacBook Pro. And the 13-inch models feature the new dual-core Intel Core i5 processor or the fastest dual-core processor available — the Intel Core i7. All the models use Intel's recently refined chipsets. So what does all that mean for the new MacBook Pro models? Bottom line: They perform up to twice as fast as the previous generation,¹ breezing through demanding tasks like editing HD video, compiling audio, or rendering a multilayered image file. And since Mac OS X Snow Leopard is designed to take advantage of every processor core, it captures every last bit of performance from the processor.



Faster single-chip microarchitecture.

Whether you're watching a movie, updating your blog, or editing photos, data has to travel from place to place to be processed. The latest Intel Core architecture puts the processor, cache, memory controller, and graphics engine on a single chip. Since data doesn't have as far to travel, you get faster performance and greater efficiency.

Turbo Boost 2.0.

Say you're using a processor-intensive application like Aperture 3 or Final Cut Pro that benefits from extra power. Turbo Boost is a dynamic performance technology that automatically increases the speed of the active cores — up to 3.4GHz. Turbo Boost 2.0 is even more dynamic and efficient. By shifting core frequency in smaller increments than before, it allows the processor to manage performance without sacrificing efficiency. All this takes place behind the scenes, so your work just goes smoother and faster.

Hyper-Threading.

Hyper-Threading is now standard on every MacBook Pro. This technology allows two threads to run simultaneously on each core, so Mac OS X recognizes eight virtual cores on a quad-core processor and four on a dual-core processor. When you're running multiple applications at once, the processor spreads tasks more evenly across a greater number of cores.

MacBook Pro Application Performance

Up to 2x faster than previous-generation MacBook Pro¹

15-inch | 13-inch

modo 501 3D render	2.2x
Cinebench 11 Multiple-processor render	2.0x
Final Cut Studio 3 ProRes render	1.9x
Mathematica 8 MathematicaMark 8	1.9x
Aperture 3.1.1 Common application tasks	1.6x

Baseline

Integrated memory controller.

With faster access to memory, each core can get right to work on your data, rather than waiting for it to arrive. That's why the new Intel Core architecture uses an integrated memory controller to connect fast 1333MHz memory directly to the processor. Together with up to 8MB of shared L3 cache, the

Energy-efficient graphics.

Thanks to the new microarchitecture, the graphics processor is on the same chip as the central processor and has direct access to L3 cache. That proximity translates into performance. The graphics processor also automatically increases clock speeds for higher workloads. An integrated video encoder enables HD video calls with FaceTime, while an



integrated memory controller helps your applications run at peak performance.

efficient decoder gives you long battery life when you're watching DVDs or iTunes movies.

Up to 3x quicker on the draw. And the render.

When you need more performance for things like playing 3D games, editing HD video, or even running CAD software, the 15- and 17-inch MacBook Pro models automatically switch to discrete AMD Radeon graphics that let you see more frames per second and experience better responsiveness. With up to 1GB of dedicated GDDR5 video memory, these processors provide up to 3x faster performance than the previous generation.²



MacBook Pro Graphics Performance

Up to 3x faster than previous-generation 15- and 17-inch MacBook Pro²

Half Life 2 Episode 2

3.1x

Portal

2.8x

Baseline



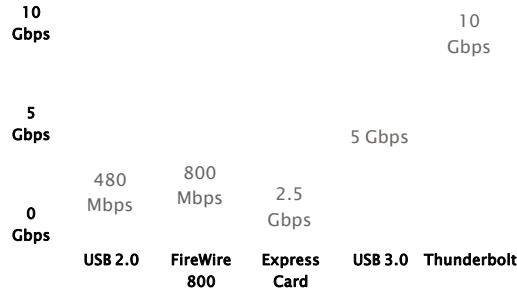
Introducing Thunderbolt. Data transfer is now lightning fast.

Thunderbolt technology has arrived — and MacBook Pro is the first notebook to have it. Now one connection carries both DisplayPort and PCI Express. With two 10-Gbps data channels, you can transfer data more than 12 times faster than with FireWire 800. And don't worry about a single drive or peripheral tying up the Thunderbolt port: You can daisy-chain as many as six devices, including your display. So with one tiny, streamlined port, you get lightning-fast transfer speeds and huge expansion capabilities.

[Learn more about Thunderbolt](#)



High-Speed I/O Performance



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1. 13-inch MacBook Pro testing conducted by Apple in February 2011 using preproduction 2.7GHz dual-core Intel Core i7-based 13-inch MacBook Pro units. 2.66GHz Intel Core 2 Duo-based 13-inch MacBook Pro systems were production units. All systems were configured with 4GB of RAM. Modo test files: BathFaucet.lxo and Couch.lxo. 15-inch MacBook Pro testing conducted by Apple in February 2011 using preproduction 2.2GHz quad-core Intel Core i7-based 15-inch MacBook Pro units. 2.66GHz dual-core Intel Core i7-based 15-inch MacBook Pro systems were production units. All systems were configured with 4GB of RAM. Modo test files: BathFaucet.lxo and Couch.lxo. MacBook Pro continuously monitors system thermal and power conditions, and may adjust processor speed as needed to maintain optimal system operation.
2. Testing conducted by Apple in February 2011 using preproduction 2.2GHz quad-core Intel Core i7-based 17-inch MacBook Pro units and preproduction 2.2GHz quad-core Intel Core i7-based 15-inch MacBook Pro units with AMD Radeon HD 6750M. 2.53GHz Intel Core i5-based 17-inch MacBook Pro systems and 2.66GHz Intel Core i7-based 15-inch MacBook Pro systems with NVIDIA GeForce GT 330M were production units. All systems were configured with 4GB of RAM. Tested at native resolutions using Portal v(4295)(400) and Half Life 2 Episode 2 v(4295)(420) with 4x antialiasing and high graphics quality. Half Life 2 Episode 2 timedemo test file: Storm. Portal timedemo test file: Mydemo1. MacBook Pro continuously monitors system thermal and power conditions, and may adjust processor speed as needed to maintain optimal system operation.

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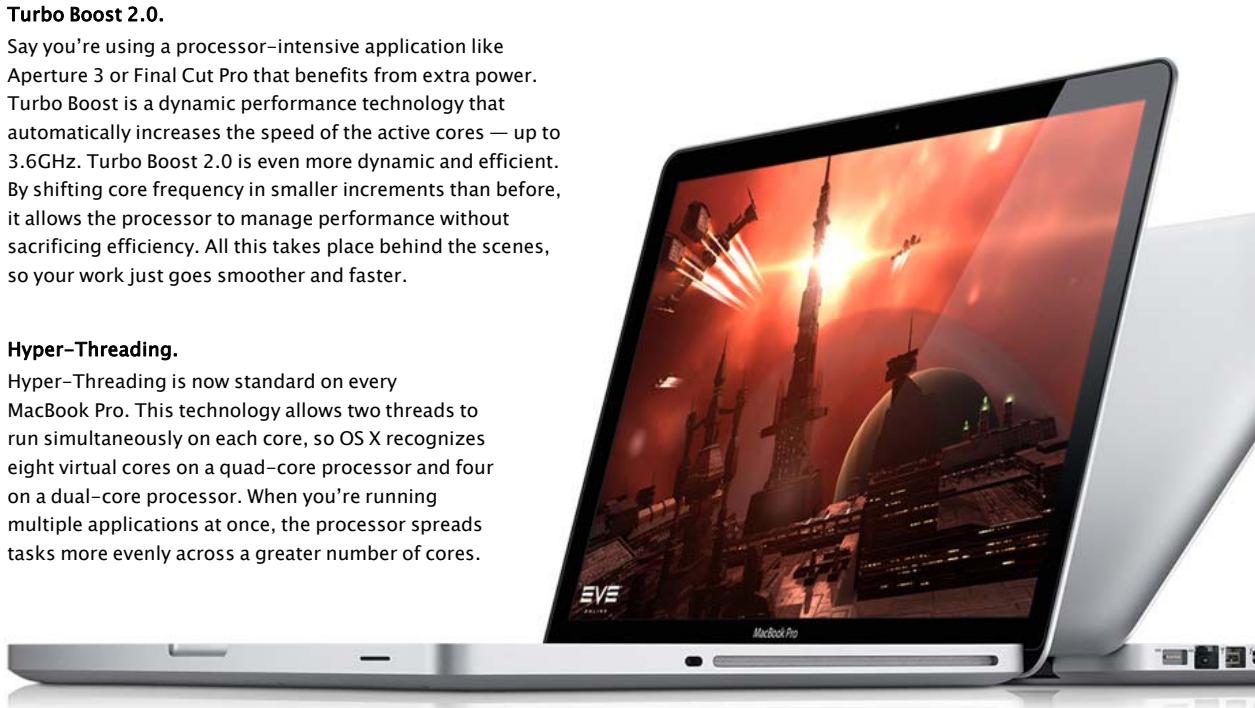
MacBook Pro Application Performance

Up to 2x faster than previous-generation MacBook Pro¹

15-inch | 13-inch

modo 501 SP4 3D render	2.3x
Cinebench 11.5 Multiple-processor render	2.2x
Mathematica 8 MathematicaMark 8	2.0x
Final Cut Studio 3 ProRes render	1.8x
Aperture 3.2 Common application tasks	1.8x

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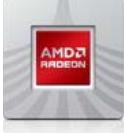
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MacBook Pro Graphics Performance

Up to 2x faster than previous-generation MacBook Pro²

Half-Life 2: Episode 2	2.1x
Call of Duty 4	1.6x
Portal 2	1.4x
Baseline	



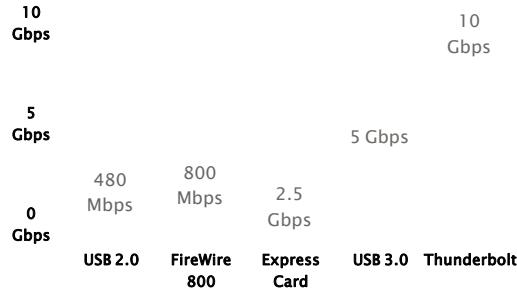
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[Learn more about Thunderbolt](#)



High-Speed I/O Performance



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2. Testing conducted by Apple in October 2011 using preproduction 2.4GHz quad-core Intel Core i7-based 17-inch MacBook Pro units and preproduction 2.4GHz quad-core Intel Core i7-based 15-inch MacBook Pro units with AMD Radeon HD 6770M. 2.53GHz Intel Core i5-based 17-inch MacBook Pro systems with NVIDIA GeForce GT 330M and 2.66GHz Intel Core i7-based 15-inch MacBook Pro systems with NVIDIA GeForce GT 330M were production units. All systems were configured with 4GB of RAM. Tested at native resolutions using Half-Life 2: Episode Two v(4295)(420), Call of Duty 4 v(1.7.1), and Portal 2 v(4710)(620), with 4x anti-aliasing and high graphics quality. Half-Life 2: Episode Two timedemo test file: Storm. Call of Duty 4 timedemo test files: Timedemoambush, Timedemobog, and Timedemopipeline. Portal 2 timedemo test file: Laser stairs. MacBook Pro continuously monitors system thermal and power conditions, and may adjust processor speed as needed to maintain optimal system operation.